



Methodological Assessment of Community Health Centre Systems in Uganda: A Multilevel Regression Analysis of Clinical Outcomes

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Abstract

Community health centres in Uganda play a crucial role in primary healthcare delivery, yet their effectiveness varies across different regions and service areas. A multilevel regression model was employed, incorporating both patient-level and centre-level variables. Data were collected from three regions in Uganda over a period of one year. The multilevel analysis revealed that the proportion of patients receiving appropriate clinical care varied significantly by region ($p < 0.05$). Findings suggest that addressing regional disparities could enhance clinical outcomes, necessitating targeted interventions in underserved areas. Policy recommendations include increasing financial support to regions with lower patient satisfaction rates and training healthcare providers in evidence-based practices. Community Health Centres, Multilevel Regression Analysis, Clinical Outcomes, Uganda Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Uganda, Community Health Centres, Geographic Disparities, Multilevel Analysis, Regression Modelling, Primary Care Delivery, Spatial Statistics*

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